

# MISSOURI DEPARTMENT OF TRANSPORTATION JOB OPPORTUNITY ANNOUNCEMENT

**Date Posted:** 09/03/2020

**Application Deadline:** Open Until Filled

**Job Post ID:** 13030

**Job Title:** Structural Designer / Intermediate Structural Designer / Senior Structural Designer

**Min Monthly Salary:** \$3,486.00 / \$3,875.00 / \$4,335.00

**Number Positions:** 4

**Location:** 105 W. Capitol Avenue, Jefferson City, MO

**District/Division:** Central Office / Bridge Division

**Human Resources Contact Number:** 573-751-2923

**Remote work location and/or teleworking will be considered for this position.**

## General Summary:

### --- Structural Designer ---

The structural designer is responsible for making structural design computations, analysis, drawings, and sketches for the design of transportation related structures, such as routine bridges, retaining walls, and box culverts. Responsibilities are performed under moderate supervision.

### --- Intermediate Structural Designer ---

The intermediate structural designer is responsible for structural design computations and sketches for moderately difficult highway structures and for preparing bridge memoranda, layouts and preliminary cost estimates for routine structures and rehabilitations. Responsibilities are performed under moderate supervision.

### --- Senior Structural Designer ---

The senior structural designer is responsible for structural design computations and sketches for any type of highway structure, preparing bridge memoranda, layouts and preliminary cost estimates, cost estimating, writing special provisions and checking work performed by others. Responsibilities are performed under moderate supervision.

## Minimum/Required Qualifications:

### --- Structural Designer ---

Bachelor's Degree: Civil Engineering

### --- Intermediate Structural Designer ---

Bachelor's Degree: Civil Engineering

Two years of experience in structural design or engineering applications. An advanced degree in civil engineering with an emphasis in structural design or engineering applications may be substituted for a maximum of two years of experience.

### --- Senior Structural Designer ---

Bachelor's Degree: Civil Engineering

Four years of experience in civil engineering with a demonstrated proficiency in structural design or engineering applications. An advanced degree in civil engineering with an emphasis in structural design or engineering applications may be substituted for a maximum of two years of experience.

## Supervisory Responsibilities:

### --- Structural Designer ---

None

### --- Intermediate Structural Designer ---

Lead Worker Only

--- **Senior Structural Designer** ---

Lead Worker Only

## **Special Working Conditions/Job Characteristics:**

--- **Structural Designer** ---

--- **Intermediate Structural Designer** ---

--- **Senior Structural Designer** ---

## **Examples of Work:**

### **--- Structural Designer ---**

- Performs structural design computations and analysis and sketches of routine bridges, retaining walls, and box culverts.
- Performs structural evaluations for special permit or construction loadings.
- Performs supporting calculations, reviews history files and updates manuals to keep engineering library updated.
- Creates sketches by hand or using computer aided drafting and design applications to illustrate the structure design.
- Rates bridges for load capacities and the federal bridge inventory as required by state statutes and national standards.
- Attends project meetings and consults/advises all parties involved including department personnel, city, county, state, federal personnel and private consultants.
- Evaluates and utilizes engineering software and develops comprehensive spreadsheets.
- Performs other responsibilities as required or assigned.

### **--- Intermediate Structural Designer ---**

- Performs structural and hydraulic design computations and dynamic analysis for seismic designs; produces sketches for moderately difficult highway bridges, retaining walls, box culverts, and other miscellaneous structures.
- Checks design and detailing performed by others, including department personnel and consultants, for conformance to standards, procedures, accepted practices, and computational errors.
- Provides guidance to structural technicians and designers preparing plans for projects; provides advice and answers questions concerning constructability, structural theory, American Association of State Highway and Transportation Officials codes, and design manuals to detailers and other structural designers.
- Determines material composition and geometric layout of proposed structures to produce the proper and most economical layout by determining items such as length, spans, and type of structures and foundations.
- Prepares bridge memorandums and preliminary cost estimates for moderately difficult structures.
- Performs supporting calculations, reviews history files and updates manuals to keep engineering library updated.
- Evaluates the structural capacities of new or existing bridges as required by state statutes and national standards.
- Analyzes structures for special permit or construction loadings; performs field checks at bridge sites for preliminary layouts; conducts special studies such as analyzing non-standard pipe and precise box culvert designs.
- Attends project meetings and consults/advises all parties involved including other department personnel, city, county, state, and federal personnel and private consultants.
- Evaluates and utilizes engineering software and develops comprehensive spreadsheets.
- Performs lead worker responsibilities, which may include providing general instruction, assigning and reviewing work, coaching and training, providing guidance and instruction in the proper and most efficient methods of accomplishing tasks, and providing input to the direct supervisor on staffing decisions and performance management.
- Performs other responsibilities as required or assigned.

### **--- Senior Structural Designer ---**

- Performs structural design computations and produces sketches for any type of highway structure, including dynamic, hydraulic and seismic design for new structures, widening and major rehabilitation of existing structures, and staged construction.
- Checks design and detailing performed by others for conformance to standards, procedures, accepted practices, and

for computational errors.

- Provides guidance to structural technicians and designers preparing plans for projects; provides advice and answers questions concerning constructability, structural theory, American Association of State Highway and Transportation Officials codes and design manuals to detailers and other structural designers.
- Determines material composition and geometric layout of proposed structures to produce the proper and most economical layout by determining items such as length, spans, and type of structures and foundations.
- Prepares bridge memorandums, writes special provisions, and prepares preliminary cost estimates for proposed structures.
- Performs supporting calculations, reviews history files and assists in the development and revisions of manuals to keep engineering library updated.
- Evaluates the structural capacities of new or existing bridges as required by state statutes and national standards.
- Analyzes structures for special permit or construction loadings; performs field checks at bridge sites for preliminary layouts; conducts special studies such as analyzing non-standard pipe and precise box culvert designs.
- Attends project meetings and consults/advises all parties involved including other department personnel, city, county, state, and federal personnel and private consultants.
- Evaluates and utilizes engineering software and develops design aids such as flow charts, comprehensive spreadsheets, and examples.
- Performs lead worker responsibilities, which may include providing general instruction, assigning and reviewing work, coaching and training, providing guidance and instruction in the proper and most efficient methods of accomplishing tasks, and providing input to the direct supervisor on staffing decisions and performance management.
- Performs other responsibilities as required or assigned.

**In order to be considered for this vacancy please go to the Missouri Department of Transportation [Employment Application System \(EAS\)](#) and submit an on-line application. Applications, and if applicable transcripts, must be received by no later than 11:55 pm of the closing date listed on the advertised vacancy.**

**MoDOT is primarily conducting telephone interviews due to social distancing requirements at this time. For applicants being interviewed who are hearing or speech impaired and need assistance, we will coordinate with the Missouri Relay System.**

**Equal Employment Opportunity / Affirmative Action Employer, M/F/D/V**

**MoDOT does not hire individuals with F-1 OPT visas into full-time or permanent part-time positions and MoDOT does not sponsor applicants for work visas.**